

Sun Systems for SAP Business Application Solutions

Matching the right server to the right task

Today more than ever, economic conditions are forcing businesses to look for ways to improve balance sheets and grow the bottom line. To that end, datacenter managers are thoroughly scrutinizing costs, including expenses for datacenter space, power, and cooling.

The need to upgrade, consolidate, and optimize SAP environments

Organizations running business operations on SAP applications find that older SAP software versions are becoming obsolete and maintenance for the older software is expensive. Implementing new SAP

time, consolidating SAP landscapes in concert with an SAP upgrade and hardware refresh can help to enhance utilization of computing resources within SAP landscapes, simplify administration and maintenance, reduce TCO, and realize improved ROI. Furthermore, a consolidated environment can help to streamline operations and introduce efficient business functions.

Characterizing SAP workloads

The traditional approach to implementing or consolidating SAP systems is to characterize workloads in order to better predict performance and help ensure

Highlights

- The Sun SPARC® Enterprise family of servers helps organizations match the right server to the right task and derive optimal benefit from SAP environments
- Upgrading, refreshing, and consolidating SAP landscapes can help to increase system utilization, leverage new SAP functionality, reduce costs, improve service levels, and maximize compute power
- Built-in partitioning and virtualization technologies increase the scalability of Sun SPARC Enterprise servers
- Broader SAP feature sets require a balanced landscape with different systems for various workload types

The breakthrough scalability, performance, reliability, and availability of Sun SPARC Enterprise servers supports more users and complex SAP modules while increasing overall datacenter efficiency.

solutions can help reduce the high cost of SAP maintenance for older software. In order to enhance system performance, take advantage of new functionality, leverage new hardware computing power, and formulate an infrastructure that can help cut costs, Sun and SAP recommend upgrading SAP applications to current levels while refreshing the hardware infrastructure. In addition to enhancing functionality, upgraded software and hardware can help organizations to meet increasingly rigorous service level agreements (SLAs) by boosting system and application availability, fulfilling requirements for greater capacity, and speeding response time. At the same

the right system is matched to the right tasks. However, with a broader range of functionality than ever before, the SAP Business Suite can combine multiple workload behaviors and types within a single application. As an example, assuming a narrow and well-characterized load behavior for sales order entry transactions could be incorrect if the SAP rules engine is used for pricing conditions. As a result, it can be difficult at best to attempt to characterize the workload patterns of SAP applications into any one set of characteristics. A one-size-fits-all approach is neither economically feasible nor is it conducive to good performance.

Clearly, workload characterization is not a simplistic process, and in order to plan a successful upgrade, consolidation, and optimization project, careful thought and consideration of the SAP applications and workload characteristics is required.

Increase SAP productivity with Sun platforms

Frequently, an optimal solution for handling the varying characteristics of SAP workloads effectively can be to combine various types of servers within an SAP landscape in order to provide the best possible performance. With outstanding scalability, flexibility, binary compatibility, high performance, and RAS as foremost design goals, Sun SPARC® Enterprise servers can provide a solid foundation for SAP infrastructures and can be matched to many types of SAP workloads. Ongoing world-leading benchmark results prove the performance and scalability of these systems for SAP environments.

The Sun SPARC Enterprise M-series servers incorporate SPARC64 VI or VII processors and provide flexible, mainframe-class, 24x7 mission-critical RAS features for open systems computing. These robust features support high availability and are ideal for single-threaded applications requiring non-disruptive service. The SPARC Enterprise M-Series servers support processing for large workloads, databases, BIDW, and OLTP. Also ideal for consolidation, these servers are capable of scaling from one to 32 or 64 dual- or quad-core processors and up to 2 TB of memory and are well-suited for tasks requiring swift response time and high I/O bandwidth to help support increased SAP productivity.

Sun SPARC Enterprise servers with CoolThreads™ technology incorporate UltraSPARC® T2 and T2 Plus processors, the industry's first system-on-a-chip (SoC). Offering the most cores and threads of any general-purpose processor available, these processors integrate all the key functions of a server, including computing, networking, security, and I/O, and integrate tightly with

the Solaris™ Operating System (OS). Scaling from one processor with 32 threads and 32 GB of RAM to four processors with 256 threads and 512 GB of RAM, the Sun SPARC Enterprise servers with CoolThreads technology deliver breakthrough performance with dramatic space, power, and cost efficiency on Sun's proven open source chip multithreading (CMT) architecture. These servers are best suited for SAP applications requiring highly-threaded processing, support for large numbers of users, massive throughput, and greater energy efficiency.

Innovative consolidation and virtualization technologies

Virtualizing and consolidating compute resources can be key to realizing greater efficiency and cost savings, and maintaining or exceeding SLAs in SAP environments. Sun Logical Domains and Solaris Containers are currently supported with SAP software and Sun continues to work with SAP to integrate and certify emerging virtualization technologies, such as Sun xVM software, for SAP solutions. Sun SPARC Enterprise servers and the Solaris OS offer a range of no-cost

virtualization features to help simplify administration, increase system uptime, and improve resource utilization:

- Solaris Containers — A breakthrough approach to virtualization, Solaris Containers support creation of many private execution environments within a single instance of the Solaris OS. These contained environments enhance security for applications and users and result in virtually unlimited flexibility in assigning and isolating resources to applications and services. Able to be managed independently at a more granular level, Solaris Containers foster efficient use of computing resources while maintaining high levels of service availability. Now, through a continued collaboration with the SAP Co-Innovation Lab in Palo Alto, California, Sun combines the features of Solaris Containers with the features of SAP's Adaptive Computing Controller. This joint solution improves the ability to provide a single point of control for operating, observing, managing, and provisioning SAP applications in a container environment.

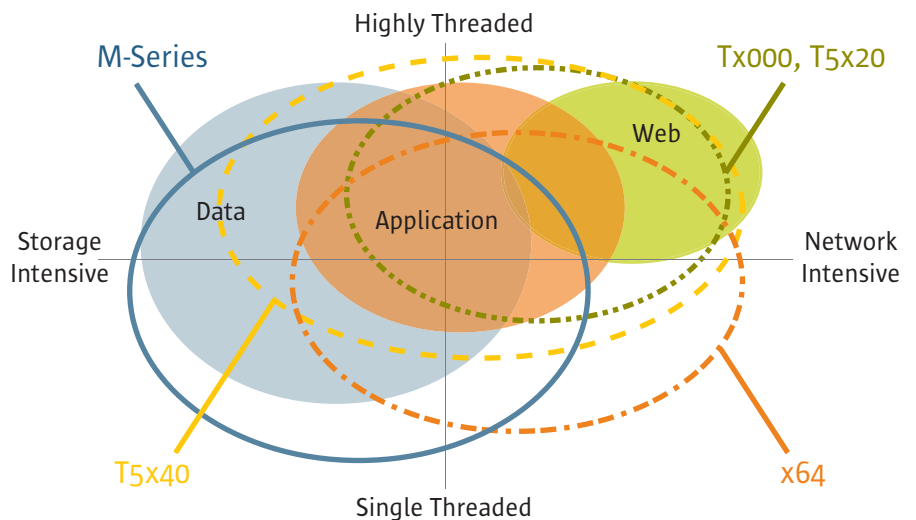


Figure 1. Different Sun SPARC Enterprise servers are better suited for various tasks

- Sun™ Logical Domains (Sun LDOMs) —**
 No-cost, built-in Sun LDOMs are implemented in the firmware and hardware of Sun SPARC Enterprise servers with CoolThreads technology, and foster greater reliability than software-based virtualization solutions. Sun LDOMs help to create redundancy within configurations, provide proactive fault management capabilities, and speed recovery time of guest logical domains. Sun LDOMs can be managed as entirely independent machines, and can be created, deleted, reconfigured, and rebooted without requiring a hardware power cycle of the server on which they reside. Because Sun LDOMs support multiple different operating systems within a single server, organizations can gain maximum flexibility, deploying up to 128 different isolated operating system instances.
- Dynamic System Domains —** Available on Sun SPARC Enterprise M-Series servers, Dynamic System Domains enable a single large system to be divided into multiple fault-isolated servers each running independent instances of the Solaris OS. Isolated at the hardware level, Dynamic System Domains can allow other domains to remain unaffected by hardware or software faults within a domain. Each domain within a single server can run a different version of the Solaris OS, making Dynamic System Domains an extremely effective method for pre-production testing of new or modified SAP applications.
- Dynamic Reconfiguration —** Adding value to Dynamic System Domains, dynamic reconfiguration (DR) allows system administrators to perform maintenance, live upgrades, and physical changes to hardware resources without shutting down critical systems, thus minimizing system downtime. Even CPU and memory can be added, maintained, repaired, and reconfigured into a running system, easily provisioning system resources as needed to meet changing workload demands. Resources can also be moved from one domain to another

to quickly handle anticipated spikes in demand or to utilize idle resources for off-peak processes.

Cost-saving high-density design

The highly scalable, high-density design of Sun SPARC Enterprise servers can provide increased savings in power, cooling, and datacenter space. By consolidating on fewer, more efficient systems, there are fewer servers to administer and maintain, and a reduced number of OS and application instances to patch and upgrade. Datacenter

managers can maximize computing assets, simplify administration and service, and reduce operational costs. At the same time, the extreme scalability of the Sun SPARC Enterprise servers provides capacity and throughput to grow with the business, accommodating complex SAP modules and supporting additional users.

Table 1 below shows the different workload uses and characteristics of the Sun SPARC Enterprise family of servers by processor type.

Table 1. The Sun SPARC Enterprise server family fulfills different workload requirements and characteristics according to processor type.

Sun SPARC Enterprise servers with Sun SPARC64® VI and VII processors	Sun SPARC Enterprise servers with UltraSPARC® T2 and T2+ processors
Server consolidation	Price/performance a key consideration
Business processing (ERP, CRM, OLTP, batch)	Need to reduce power and cooling costs
Database, datamart, data warehouse	High compute density and reduced footprint
Decision support	Need to lower TCO requirements
IT infrastructure	Server consolidation and virtualization
System and network management	High throughput applications
Application serving	Multithreaded applications
Application development	Security applications
Compute-intensive engineering	Multithreaded batch processing
Isolation of applications at hardware level	Highly parallelized heavy batch jobs
Dynamic reallocation of resources (DR)	Web-facing workloads
High availability requirements	Many users/tasks that keep threads busy
Minimal downtime requirements	Need for highly efficient network connectivity
High serviceability requirements	Database (when using multiprocessor servers)
Single-threaded applications	Test, development, QA, and training systems
Need for high memory and I/O bandwidth	
Large batch jobs requiring uninterrupted processing	
Mission critical 24x7 applications	
High-performance, intensive floating point operations	
SAP patches	

Sun experts can help you optimize for efficiency

Because it can be difficult to accurately characterize different SAP workloads and because applications can contain characteristics suited to different Sun SPARC Enterprise servers within a single module, it is helpful to engage Sun's experienced, SAP-certified staff for assistance.

Sun Solution Centers for SAP

The Sun Solution Centers for SAP offer expertise in planning and performing upgrades of Sun infrastructure and SAP solution software, as well as pinpointing workload behaviors and requirements. Staff from the Sun Solution Centers for SAP — trained by SAP — can help analyze and recommend the appropriate Sun servers for improving application performance, matching the right system to the right task. Sun Solution Centers for SAP can help with system requirements, technical architecture review, configuration and sizing, and capacity and installation planning to help you select and implement an optimized infrastructure for SAP solutions. These centers can also offer proofs of concept, business strategy assessment, performance reviews and tuning support, and assist with the design of high-availability solutions and migration planning for legacy systems and data.

Sun Professional Services

Trained and certified by SAP, Sun Professional consultants can assist in planning, deploying, and managing SAP implementations, as well as analyzing SAP applications. Offering a thorough understanding of Sun and SAP technologies, Sun Professional Services provides a comprehensive set of integration services designed to help implement SAP applications quickly, efficiently, and without business interruption. With a complete portfolio of SAP integration services tailored to complement

the life cycle of SAP implementations, Sun Professional Services can help with initial planning, integration with existing IT environments, and management of future growth of the SAP landscape.

SAP Migration Services

Sun also offers SAP Migration Services to help organizations to quickly and smoothly migrate to Sun platforms. Sun Professional Services consultants work with organizational staff to develop a rapid, safe, and comprehensive migration plan to move SAP applications and data to Sun systems. The ultimate goal is to minimize migration risk and downtime and maximize Sun platform performance.

Save on Sun hardware

Sun offers various programs that can make it easy for organizations to experience the performance and innovation of Sun platforms without risk. Sun's Try and Buy Program provides customers with 60-day trials of numerous systems including full product support and warranty. You pay nothing for the trial — not even shipping — and if you choose to keep the hardware, you can often purchase at a discounted price.

Sun's comprehensive Upgrade Advantage Program program offers exceptional trade-in discounts towards a new Sun system with allowances of up to 40% on existing Sun and qualified competitive systems. The program offers investment protection by preserving and leveraging existing application and infrastructure investments and helps to improve performance while lowering TCO.

Partners you can count on

For more than 15 years, Sun and SAP have been cooperating in a strong alliance designed to help companies deploy reliable,

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high-performance, and cost-effective SAP solutions. Sun offers a powerful product family that scales from entry-level servers to large scale, high-end servers for mission-critical applications such as server consolidation, mainframe re-hosting, high performance computing, decision support, and data warehousing. Implementing SAP software on a Sun infrastructure delivers a flexible, yet solid IT foundation upon which companies can build compelling SAP solutions.

A Sun and SAP solution consists of innovative SAP software running on powerful Sun systems, and is designed to meet the computing challenges of today and tomorrow. Together, Sun and SAP offer a powerful infrastructure and software solution that can help to reduce the risk of upgrading SAP landscapes, minimize cost and complexity, and provide a platform that easily accommodates future growth.

